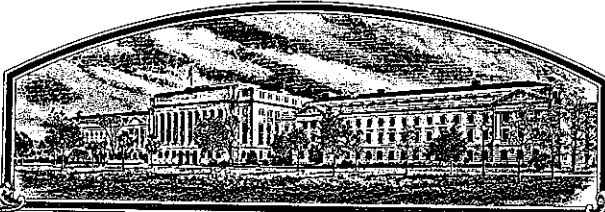


No.

8200139



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**A. L. Castle, Inc.**

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

TOMATO

'Castle Red'



In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this 26th day of November in the year of our Lord one thousand nine hundred and eighty-two

Attest:  
*Kenneth H. Evans*

Acting  
Commissioner  
Plant Variety Protection Office  
Grain Division  
Agricultural Marketing Service

*John R. Block*  
Secretary of Agriculture

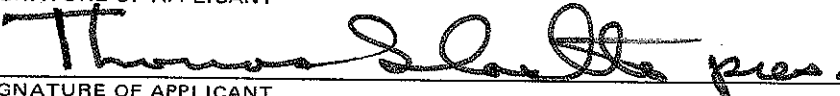
U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
LIVESTOCK, MEAT, GRAIN & SEED DIVISION

FORM APPROVED: OMB NO. 0581-0005

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1. NAME OF APPLICANT(S) <b>A. L. CASTLE, INC.</b>		2. TEMPORARY DESIGNATION <b>CASTLEX 622</b>		3. VARIETY NAME <b>CASTLE RED</b>	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) <b>190 Mast Street - P. O. Box 877 Morgan Hill, CA 95037</b>		5. PHONE (Include area code) <b>(408) 779-3141</b>		FOR OFFICIAL USE ONLY PVPO NUMBER <b>8200139</b>	
6. GENUS AND SPECIES NAME <b>LYCOPERSICON ESCULENTUM L.</b>		7. FAMILY NAME (Botanical) <b>SOLANACEAE</b>		FILING DATE <b>7/13/82</b> TIME <b>1:30</b> <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.	
8. KIND NAME <b>TOMATO</b>		9. DATE OF DETERMINATION <b>JUNE 1981</b>		FEES RECEIVED AMOUNT FOR FILING \$ <b>500.00</b> DATE <b>7/13/82</b> AMOUNT FOR CERTIFICATE \$ <b>250.00</b> DATE <b>9/27/82</b>	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) <b>Corporation</b>				12. DATE OF INCORPORATION <b>March 4, 1949</b>	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION <b>California</b>				13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS <b>Thomas S. Castle P.O. Box 877 Morgan Hill, CA 95037</b>	
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.) d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of the Variety					
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) <input type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input checked="" type="checkbox"/> No					
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> Yes <input type="checkbox"/> No			17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> Foundation <input type="checkbox"/> Registered <input type="checkbox"/> Certified		
18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No					
19. HAVE RIGHTS BEEN GRANTED IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No					
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF APPLICANT 				DATE <b>July 7, 1982</b>	
SIGNATURE OF APPLICANT				DATE <b>1</b>	

## INSTRUCTIONS

**General:** Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Department of Agriculture, Agricultural Marketing Service, Livestock, Meat, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

### Item

- 9 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 14a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 14b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 14c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 14d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 15 If "Yes" is specified (*seed of this variety be sold by variety name only as a class of certified seed*) the applicant may **NOT** reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "No," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 16 See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

RECEIVED  
JUL 13 1982



## APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

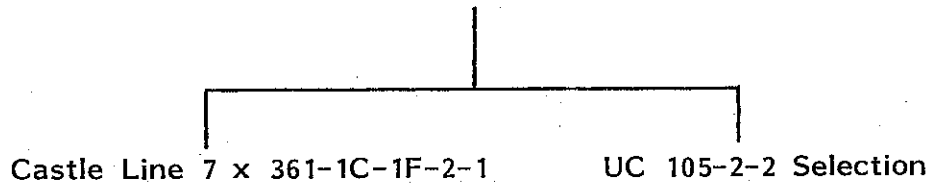
A. L. CASTLE, INC.

CASTLE RED

## EXHIBIT A: ORIGIN AND BREEDING HISTORY

PEDIGREE:

CASTLE RED



'Castle Red' was developed by the pedigree method of breeding. One generation of single plant selection in the  $F_2$  population was followed by three generations of small mass selection. Foundation seed was produced by a bulk mass in the  $F_6$  generation.



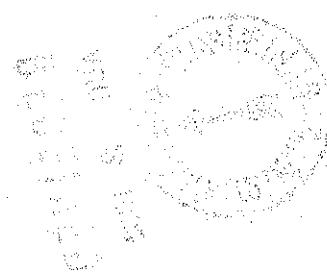
APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

A. L. CASTLE, INC.

CASTLE RED

SUPPLEMENT TO EXHIBIT A: ORIGIN AND BREEDING HISTORY

"Castle Red" exhibited genetic stability for all characters in the F<sub>6</sub> generation, and has maintained this stability for five generations of observation.



## APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

A. L. CASTLE, INC.

CASTLE RED

## EXHIBIT B: NOVELTY STATEMENT

'Castle Red' most closely resembles 'VF 315'; however, 'Castle Red' has jointless pedicels (jz), whereas 'VF 315' has jointed pedicels. In addition, 'Castle Red' has a heavier foliage canopy, smaller fruit size (14.9 fruits/kg. vs 14.2 fruits/kg.), firmer fruits with much higher viscosity and brighter red peeled pericarp color than 'VF 315'.

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
LIVESTOCK, MEAT, GRAIN AND SEED DIVISION  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MARYLAND 20705

EXHIBIT C  
(Tomato)

OBJECTIVE DESCRIPTION OF VARIETY  
TOMATO (*Lycopersicon esculentum* Mill.)

NAME OF APPLICANT(S) <b>A. L. CASTLE, INC.</b>	TEMPORARY DESIGNATION <b>CASTLEX 622</b>	VARIETY NAME <b>CASTLE RED</b>
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) <b>190 Mast Street - P. O. Box 877 Morgan Hill, CA 95037</b>		FOR OFFICIAL USE ONLY PVPO NUMBER <b>8200139</b>

Choose responses for the following characters which best fit your variety. Complete this form as fully as possible for best characterization of the variety. When a single quantitative value is requested (e.g., fruit weight), your answer should be the mean of an adequate-sized, unbiased sample of plants. Use leading zeroes when necessary (e.g.,   or   , etc.). The applicant variety should be compared with at least one well-known standard check variety of the same type (see list of recommended check varieties below), and grown in the same trials. The characters on this form should be described from plants grown under normal conditions of culture for the variety. Indicate by a check whether trial data are from greenhouse \_\_\_\_\_ or field ☒ plantings. Trials direct-seeded ☒ or transplanted \_\_\_\_\_; staked \_\_\_\_\_ or unstaked ☒. Give locations and dates of seeding and transplanting here: Hollister, California  
May 13, 1981

COMPARISONS SHOULD BE MADE TO ONE OR MORE CHECK VARIETIES IN THE FOLLOWING LIST, IF AT ALL POSSIBLE. ENTER THE NUMBER OF THE CHECK IN BOXES WHERE IDENTITY OF CHECK IS REQUESTED.

1 = Ace 55 VF	7 = Homestead 24	13 = Red Rock	19 = VF 134
2 = Campbell 37	8 = Marglobe	14 = Roma VF	20 = US 28
3 = Chico III	9 = Murietta	15 = Rutgers	21 = VF 145 B 7879
4 = Flora Dade	10 = New Yorker	16 = Sunray	22 = Other (Specify) _____
5 = Florida MH-1	11 = Ohio MR-13	17 = Tropic	
6 = Heinz 1350	12 = Red Cherry Large	18 = UC 82	

1. SEEDLING:

Anthocyanin in hypocotyl of 2-15 cm. seedling: 1 = Absent 2 = Present  Habit of 3-4 week old seedling: 1 = Normal 2 = Compact

2. MATURE PLANT (at maximum vegetative development):

Growth: 1 = Indeterminate 2 = Determinate    Cm. Height

Form: 1 = Lax, open 2 = Normal 3 = Compact 4 = Dwarf 5 = Brachytic

Size of canopy (compared to others of similar type): 1 = Small 2 = Medium 3 = Large

Habit: 1 = Sprawling (decumbent) 2 = Semi-erect 3 = Erect ('Dwarf Champion')

3. STEM:

Branching: 1 = Sparse ('Brehm's Solid Red', 'Fireball') 2 = Intermediate ('Westover') 3 = Profuse ('UC 82')

Branching at cotyledonary or first leafy node: 1 = Present 2 = Absent

No. of nodes below the first inflorescence: 1 = 1-4 2 = 4-7 3 = 7-10 4 = 10 or more

No. of nodes between early (1st - 2nd, 2nd - 3rd) inflorescences.  No. of nodes between later-developing inflorescences.

Pubescence on younger stems: 1 = Smooth (no long hairs) 2 = Sparsely hairy (scattered long hairs) 3 = Moderately hairy 4 = Densely hairy or wooly

4. LEAF (mature leaf beneath the 3rd inflorescence):

Type: 1 = Tomato 2 = Potato ('Trip-L-Crop')  Morphology (choose illustration on pg. 5 of this form that is most similar)

Margins of major leaflets: 1 = Nearly entire 2 = Shallowly toothed or scalloped 3 = Deeply toothed or cut, esp. towards base

Marginal rolling or wiltiness: 1 = Absent 2 = Slight 3 = Moderate 4 = Strong

Onset of leaflet rolling: 1 = Early-season 2 = Mid-season 3 = Late season

5

## 4. LEAF (mature leaf beneath the 3rd inflorescence -- continued):

- 1 Surface of major leaflets: 1 = Smooth 2 = Rugose (bumpy or veiny)
- 2 Pubescence: 1 = Smooth (no long hairs) 2 = Normal 3 = Hirsute 4 = Wooly

## 5. INFLORESCENCE (make observations on 3rd inflorescence):

- 1 Type: 1 = Simple 2 = Forked (2 major axes) 3 = Compound (much branched)
- 0 6 Number of flowers in inflorescence, average
- 1 Leafy or "running" inflorescences: 1 = Absent 2 = Occasional 3 = Frequent

## 6. FLOWER:

- 1 Calyx: 1 = Normal, lobes awl-shaped 2 = Macrocalyx, lobes large, leaflike 3 = Fleshy
- 2 Calyx-lobes: 1 = Shorter than corolla 2 = Approx. equalling corolla 3 = Distinctly longer than corolla
- 1 Corolla color: 1 = Yellow 2 = Old gold 3 = White or tan
- 1 Style pubescence: 1 = Absent 2 = Sparse 3 = Dense
- 1 Anthers: 1 = All fused into tube 2 = Separating into 2 or more groups at anthesis
- 1 Fasciation (1st flower of 2nd or 3rd inflorescence): 1 = Absent 2 = Occasionally present 3 = Frequently present

## 7. FRUIT (3rd fruit of 2nd or 3rd cluster): For the first 5 characters below, match your variety with the most similar illustration on pg. 5 of this form.

- 4 Typical fruit shape: 1 Shape of transverse section: 1 Shape of stem end:
- 4 Shape of blossom end: 1 Shape of pistil scar:

- 2 Abscission layer: 1 = Present (pedicellate) 2 = Absent (jointless) 2 Point of detachment of fruit at harvest: 1 = At pedicel joint 2 = At calyx attachment

- mm length of pedicel (from joint to calyx attachment)
- 0 5 5 mm length of mature fruit (stem axis) . . . . . 0 5 4 mm length, check var. no. . . . . 0 9
- 0 4 4 mm diameter of fruit at widest point . . . . . 0 4 1 mm diameter, check var. no. . . . . 0 9
- 0 6 1 g weight of mature fruit . . . . . 0 5 9 g weight, check var. no. . . . . 0 9

- 2 No. of locules: 1 = Two 2 = Three and four 3 = Five or more
- 1 Fruit surface: 1 = Smooth 2 = Slightly rough 3 = Moderately rough or ribbed
- 3 Fruit base color (mature-green stage): 1 = Light green ('Lanai', 'VF145-F5') 2 = Light gray-green ('Westover') 3 = Apple or medium green ('Heinz 1439 VF') 4 = Yellow green 5 = Dark green
- 1 Fruit pattern (mature-green stage): 1 = Uniform green 2 = Green-shouldered 3 = Radial stripes on sides of fruit
- Shoulder color if different from base: 1 = Dark green 2 = Grey green 3 = Yellow green
- 5 Fruit color, full-ripe: 1 = White 2 = Yellow 3 = Orange 4 = Pink 5 = Red 6 = Brownish 7 = Greenish 8 = Other (Specify)
- 3 Flesh color, full-ripe: 1 = Yellow 2 = Pink 3 = Red/Crimson 4 = Orange 5 = Other (Specify)
- 1 Flesh color: 1 = Uniform 2 = With lighter and darker areas in walls
- 3 Locular gel color of table-ripe fruit: 1 = Green 2 = Yellow 3 = Red
- 2 Ripening: 1 = Blossom-to-stem end 2 = Uniform



## 7. FRUIT (3rd fruit of 2nd or 3rd cluster): Continued

<input type="text" value="1"/>	Ripening:	1 = Inside out	2 = Uniformly	3 = Outside in	<input type="text" value="1"/>	Stem scar size:	1 = Small ('Roma')
<input type="text" value="2"/>	Epidermis color:	1 = Colorless	2 = Yellow			2 = Medium ('Rutgers')	3 = Large
<input type="text" value="1"/>	Epidermis:	1 = Normal	2 = Easy-peel		<input type="text" value="1"/>	Core:	1 = Coreless (absent or smaller than 6x6 mm)
<input type="text" value="2"/>	Epidermis texture:	1 = Tender	2 = Average	3 = Tough		2 = Present	
<input type="text" value="3"/>	Thickness of pericarp				<input type="text" value="3"/>	Thickness of pericarp, check var. no.	<input type="text" value="0"/> <input type="text" value="9"/>
		1 = Under 3 mm	2 = 3-6 mm	3 = 6-9 mm		4 = Over 9 mm	

## 8. RESISTANCE TO FRUIT DISORDERS (Use code: 0 = Unknown, 1 = Susceptible, 2 = Resistant)

<input type="text" value="0"/>	Blossom end rot	<input type="text" value="2"/>	Catface	<input type="text" value="0"/>	Fruit pox	<input type="text" value="2"/>	Zippering
<input type="text" value="2"/>	Blotchy ripening	<input type="text" value="1"/>	Cracking, concentric	<input type="text" value="2"/>	Gold fleck	<input type="text" value=""/>	Other (Specify)
<input type="text" value="0"/>	Bursting	<input type="text" value="1"/>	Cracking, radial	<input type="text" value="2"/>	Graywall		

## 9. DISEASE AND PEST REACTION (Use code: 0 = Not tested, 1 = Susceptible, 2 = Resistant). NOTE: If claim of novelty is based wholly or in substantial part upon disease resistance, trial data should be appended. These should specify the method of testing, the reaction of the application variety, and reaction of well-known check varieties grown in the trial (identified by name).

## VIRAL DISEASES:

<input type="text" value="0"/>	Cucumber mosaic	<input type="text" value="0"/>	Tobacco mosaic, Race 0	<input type="text" value="0"/>	Tobacco mosaic, Race 2 <sup>2</sup>
<input type="text" value="0"/>	Curly top	<input type="text" value="0"/>	Tobacco mosaic, Race 1	<input type="text" value="0"/>	Tomato spotted wilt
<input type="text" value="0"/>	Potato-Y virus	<input type="text" value="0"/>	Tobacco mosaic, Race 2	<input type="text" value="0"/>	Tomato yellows
<input type="text" value=""/>	Other virus (Specify)				

## BACTERIAL DISEASES:

<input type="text" value="0"/>	Bacterial canker ( <i>Corynebacterium michiganense</i> )	<input type="text" value="0"/>	Bacterial spot ( <i>Xanthomonas vesicatorum</i> )
<input type="text" value="0"/>	Bacterial soft rot ( <i>Erwinia carotovora</i> )	<input type="text" value="0"/>	Bacterial wilt, ( <i>Pseudomonas solanacearum</i> )
<input type="text" value="0"/>	Bacterial speck ( <i>Pseudomonas tomato</i> )	<input type="text" value=""/>	Other bacterial disease (Specify)

## FUNGAL DISEASES:

<input type="text" value="0"/>	Anthrachnose ( <i>Colletotrichum</i> spp.)	<input type="text" value="0"/>	Leaf mold, Race 1 ( <i>Cladosporium fulvum</i> )
<input type="text" value="0"/>	Brown root rot or corky root, ( <i>Pyrenochaeta lycopersici</i> )	<input type="text" value="0"/>	Leaf mold, Race 2
<input type="text" value="0"/>	Collar rot or stem canker, ( <i>Alternaria solani</i> )	<input type="text" value="0"/>	Leaf mold, Race 3
<input type="text" value="0"/>	Early blight defoliation, ( <i>Alternaria solani</i> )	<input type="text" value=""/>	Leaf mold, other races (Specify)
<input type="text" value="2"/>	Fusarium wilt, Race 1, ( <i>F. oxysporum</i> f. <i>lycopersici</i> )	<input type="text" value="0"/>	Nailhead spot ( <i>Alternaria tomato</i> )
<input type="text" value="1"/>	Fusarium wilt, Race 2	<input type="text" value="0"/>	Septoria leafspot ( <i>S. lycopersici</i> )
<input type="text" value="0"/>	Fusarium wilt, Race 3	<input type="text" value="0"/>	Target leafspot ( <i>Corynespora cassicola</i> )
<input type="text" value="0"/>	Gray leaf spot ( <i>Stemphylium</i> spp.)	<input type="text" value="2"/>	Verticillium wilt, Race 1 ( <i>V. albo-atrum</i> )
<input type="text" value="0"/>	Late blight, Race 0, ( <i>Phytophthora infestans</i> )	<input type="text" value="1"/>	Verticillium wilt, Race 2
<input type="text" value="0"/>	Late blight, Race 1	<input type="text" value=""/>	Other fungal disease
		<input type="text" value=""/>	Other fungal disease

0	Colorado potato beetle ( <i>Leptinotarsa decemlineata</i> )	0	Tomato hornworm ( <i>Manduca quinquemaculata</i> )
1	Southern root knot nematode ( <i>Meloidogyne incognita</i> )	0	Tomato fruitworm ( <i>Heliothis zea</i> )
1	Spider mites ( <i>Tetranychus</i> spp.)	1	Whitefly ( <i>Trialeurodes vaporariorum</i> )
0	Sugar beet army worm ( <i>Spodoptera exigua</i> )		Other (Specify) _____
1	Tobacco flea beetle ( <i>Epitrix hirtipennis</i> )		

Ozone       Sulfur dioxide       Other (Specify) \_\_\_\_\_

	SUBMITTED VARIETY	Check Variety <u>VF 145B-7879</u>	Check Variety _____	Check Variety _____
pH	4.36	4.22		
Titratable acidity, as % citric	0.33	0.53		
Total solids (dry matter, seeds and skin removed)	5.52	6.05		
Soluble solids, as °Brix	4.9	5.6		

	APPLICATION VARIETY	Check variety <u>VF 145B-7879</u>	Check variety _____	Check variety _____
Seeding to 50% flower (1 open flower on 50% of plants)				
Seed to once-over harvest ( <i>if applicable</i> )	121 days	125 days		

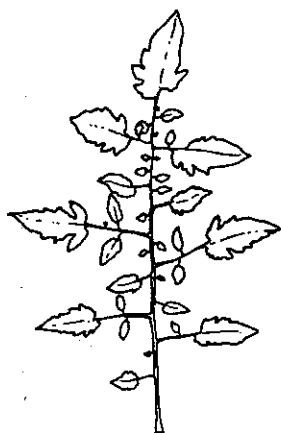
**2** Relative maturity in areas tested:

1 = Early	2 = Medium early	3 = Medium
4 = Medium late	5 = Late	6 = Variable (if relative maturity is known to differ by location or environment, please explain on separate sheet).

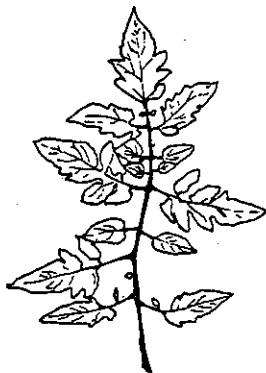
0	1	Culture:	1 = Field	2 = Greenhouse	
0	0	Principal use(s):	1 = Home garden	2 = Fresh market	3 = Whole-pack canning
	3		4 = Concentrated products	5 = Other (Specify)	
	2	Machine harvest:	1 = Not adapted	2 = Adapted	
7	9	Regions to which adaptation has been demonstrated:	1 = Northeast	2 = Mid Atlantic	3 = Southeast
1	1		5 = Great Plains	6 = South-central	7 = Intermountain West
			9 = California: Sacramento and Upper San Joaquin Valley	8 = Northwest	
			10 = California: Coastal areas	11 = California: Southern San Joaquin Valley & deserts	

## ILLUSTRATIONS OF TOMATO LEAF AND FRUIT CHARACTERISTICS

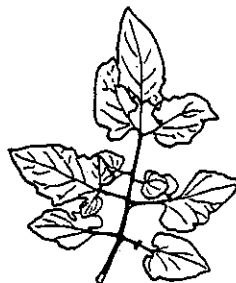
## 4. LEAF: Morphology:



(1)



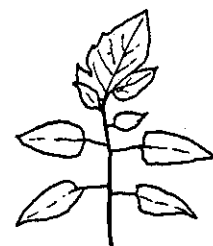
(2)



(3)



(4)

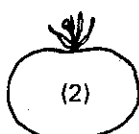


(5)

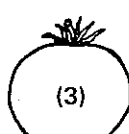
## 7. FRUIT: Typical fruit shape:



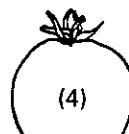
(1)



(2)



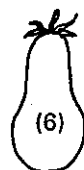
(3)



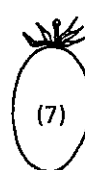
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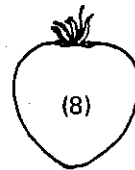
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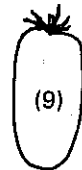
(6)



(7)



(8)

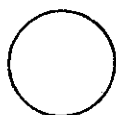


(9)



(10)

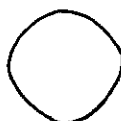
## Shape of transverse section:



1=round



2=flattened



3=angular

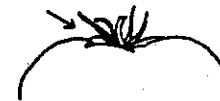


4=irregular

## Shape of stem end:



1=flat



2=indented

## Shape of blossom end:



1=indented



2=flat



3=nipped

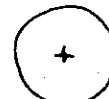


4=tapered

## Shape of pistil scar:



1=dot



2=stellate



3=linear



4=irregular

## REFERENCES

- Anonymous, 1976. All About Tomatoes. Ortho Books, Chevron Chemical Co., San Francisco. In three volumes: Midwest/Northeast Edition, West Edition, and South Edition.
- Ware, G.W. & J. P. McCollum, 1968. Producing Vegetable Crops. The Interstate Printer & Publishers, Inc., Danville, Illinois. Chapter 30, pp. 451-473, "Tomatoes".
- Warnock, S.J. 1978. Using Tomato Heat Units. Leaflet No. 6, Campbell Institute for Agricultural Research, Camden, NJ. 10 p.
- Webb, R.E., T. H. Barksdale, & A. K. Stoner, 1973, "Tomatoes", pp. 344-361, In: Nelson, R.R. (Ed.), Breeding Plants for Disease Resistance. Pennsylvania State University Press, University Park.
- Young, P.A. & J.W. MacArthur, 1947. Horticultural characters of tomatoes. Bull. Texas Agric. Exper. Station No. 698.

## APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

A. L. CASTLE, INC.

CASTLE RED

## EXHIBIT D: ADDITIONAL DESCRIPTION

'Castle Red' is a medium early maturing, deep globe shaped processing tomato, Lycopersicon esculentum L.

The medium size determinate vine is medium-green in color, and covers the fruit well. Pedicels are jointless (jz), and fruit stem scars are very small. Immature fruits are uniformly light green (uu), ripening to a bright red color, and are 3-loculed and "coreless". Ripe fruits are small (14.9 fruits/kg.), firm, very smooth, and have a deep red pericarp when peeled.

Soluble solids are in the medium range, about 10% less than VF145B-7879. Viscosity is medium-high, in the U.C. 134 range, and pH is approximately 4.39.

Disease resistance is know to include Fusarium, Race 1 and Verticillium, Race 1.

PLANT VARIETY PROTECTION ASSIGNMENT

THIS PLANT VARIETY PROTECTION ASSIGNMENT ("Assignment") is made and entered into as of this \_\_\_\_ day of \_\_\_\_\_, 1994, ("Effective Date"), by and between Sunseeds Ltd., L.P., a Delaware limited partnership, ("Assignor"), and Sunseeds Company (formerly Sunseeds Acquisition Corporation), a Delaware corporation, ("Assignee").

WHEREAS, pursuant to a certain Asset Purchase Agreement dated March 7, 1994, Assignor has agreed to sell to Assignee substantially all of Assignor's assets used in the Assignor's business, including the United States Plant Variety Protection Certificates set forth on Schedule A attached hereto (the "PVP Certificates") and the foreign plant variety registrations set forth on Schedule B attached hereto (the "Foreign Registrations").

WHEREAS, Assignor is the sole and exclusive owner of the entire right, title and interest in, to and under the PVP Certificates and Foreign Registrations; and

WHEREAS, Assignee wishes to acquire and Assignor wishes to assign all right, title and interest in and to the PVP Certificates and Foreign Registrations.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor does hereby sell, assign, transfer and set over to Assignee, the entire right, title and interest in and to the PVP Certificates and Foreign Registrations, for the United States and for any foreign country, for its own use and enjoyment, and for

the use and enjoyment of its successors, assigns or other legal representatives, as fully and entirely as the same would have been held and enjoyed by Assignor if this Assignment and sale had not been made; together with all claims for damages by reason of past, present or future infringement or other unauthorized use of the plants protected by the PVP Certificates and Foreign Registrations, with the right to sue for, and collect the same for its own use and enjoyment, and for the use and enjoyment of its successors, assigns, or other legal representatives.

Assignor authorizes and requests the Department of Agriculture to record Assignee as owner of the PVP Certificates and assignee of the entire right, title and interest in, to and under the same, for the sole use and enjoyment of Assignee, its successors, assigns or other legal representatives.

Assignor authorizes and requests the Ministero Per Il Coordinamento Delle Politiche Alimentare Gest. Prod. Agricole and any other organization, department or agency with jurisdiction over registration of plant varieties to record Assignee as owner of the Foreign Registrations and assignee of the entire right, title and interest in, to and under the same, for the sole use and enjoyment of Assignee, its successors, assigns or other legal representatives.

Assignor shall provide Assignee, its successors, assigns or other legal representatives, reasonable cooperation and assistance at Assignee's request (such as the execution and

delivery of any and all affidavits, declarations, oaths, exhibits, assignments, powers of attorney or other documentation as may be reasonably required) in the implementation or perfection of this Assignment.

\* \* \* \* \*

IN TESTIMONY WHEREOF, the undersigned has caused this Assignment to be signed and executed this 31<sup>st</sup> day MARCH, 1994.

Sunseeds Ltd., L.P.

By: Gerald M. Prado

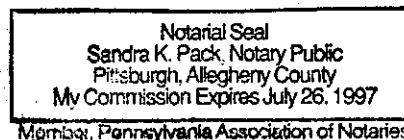
Name: Gerald M. Prado

Title: President/CEO

STATE OF Pennsylvania  
COUNTY OF Allegheny } SS.

On this 31<sup>st</sup> day of March, 1994, there appeared before me Gerald M. Prado, personally known to me to be the same person whose name is subscribed to the foregoing Assignment and who acknowledged that he signed the foregoing Assignment as his voluntary act and deed for the use and purpose therein set forth.

Sandra K. Pack  
Notary Public





## Assignment

## Schedule A

PLANT VARIETY PROTECTION CERTIFICATES

<u>Current Record Owner</u>	<u>PV#</u>	<u>Crop Kind</u>	<u>Name of Variety</u>	<u>Cert. Issue Date</u>	<u>Expiration Date</u>
A.L. Castle, Inc.	8100077	Tomato	Castlong ug	11/26/82	11/26/2000
	8100078	Tomato	Castlerock	11/26/82	11/26/2000
	8200139	Tomato	Castle Red	11/26/82	11/26/2000
ARCO Seed Co.	7900076	Onion	Colossal	10/18/79	10/18/96
	7900086	Onion	New Mexico White Grano PRR	10/18/79	10/18/96
	7900117	Onion	New Mexico Yellow Grano PRR	1/29/80	1/29/97
	8000039	Onion	Red Sunset	7/31/80	7/31/97
	8000040	Onion	Blanco Duro	7/31/80	7/31/97
	8000041	Onion	Brooks PRR	7/31/80	7/31/97
	8000159	Onion	Texspan PRR	6/11/81	6/11/99
	8000161	Onion	Early Grand PRR	7/30/81	7/30/99
	8100128	Onion	Glory	4/28/83	4/28/2001
	8100129	Onion	Paradise	4/28/83	4/28/2001
	8100130	Onion	Regal	4/28/83	4/28/2001
	8100166	Onion	Sweet Winter	11/26/82	11/26/2000
	8300083	Onion	Crystal Wax Pickling	12/30/83	12/30/2001
	8100001	Triticale	Jenkins	2/15/84	
	8200032	Triticale	Grace	11/15/81	
	8100150	Celery	Grande	1/13/83	
Sunseeds, Div. of Westseeds, Inc.	9100045	Tomato	Sun 6095	1/31/92	1/31/2010
Sunseeds Genetics, Inc.	7600052	Lettuce	Chaparral	5/16/77	5/16/94
	7600053	Lettuce	Costaverde	8/24/77	8/24/94
	7600054	Lettuce	Gustaverde	8/24/77	8/24/94
	7600055	Lettuce	Mesaverde	5/31/77	5/31/94
	7900067	Lettuce	Commander	7/26/79	7/26/96
	8500064	Tomato	Mystro	9/30/87	9/30/2005
	8700194	Tomato	Sun 1643	11/29/91	11/29/2009
	8900171	Cauliflower	White Diamond	4/18/89	
	8800057	Pepper	Prima Belle	9/30/88	9/30/2006
UF Genetics, Inc.	8300168	Okra	Cajun Queen	9/27/85	9/27/2003

82-139

8200139

## O'MELVENY &amp; MYERS

400 SOUTH HOPE STREET  
LOS ANGELES, CALIFORNIA 90071-2899  
TELEPHONE (213) 669-6000  
FACSIMILE (213) 669-6407

EMBARCADERO CENTER WEST  
275 BATTERY STREET  
SAN FRANCISCO, CALIFORNIA 94111-3305  
TELEPHONE (415) 984-8700  
FACSIMILE (415) 984-8701

1999 AVENUE OF THE STARS  
LOS ANGELES, CALIFORNIA 90067-6035  
TELEPHONE (310) 553-6700  
FACSIMILE (310) 246-6779

610 NEWPORT CENTER DRIVE  
NEWPORT BEACH, CALIFORNIA 92660-6429  
TELEPHONE (714) 760-9600  
FACSIMILE (714) 669-6994

555 13TH STREET, N.W.  
WASHINGTON, D. C. 20004-1109

TELEPHONE (202) 383-5300  
TELEX 89622 • FACSIMILE (202) 383-5414

March  
16th  
1 9 9 5

CITICORP CENTER  
153 EAST 53RD STREET  
NEW YORK, NEW YORK 10022-4611  
TELEPHONE (212) 326-2000  
FACSIMILE (212) 326-2061

ONE GATEWAY CENTER  
NEWARK, NEW JERSEY 07102  
TELEPHONE (201) 639-8600  
FACSIMILE (201) 639-8630 • 639-8631

10 FINSBURY SQUARE  
LONDON EC2A 1LA  
TELEPHONE (0171) 256-8451  
FACSIMILE (0171) 638-8205

SANBANCHO KB-6 BUILDING  
6 SANBANCHO, CHIYODA-KU  
TOKYO 102  
TELEPHONE (03) 3239-2800  
FACSIMILE (03) 3239-2432

1104 LIPPO TOWER  
LIPPO CENTRE  
89 QUEENSWAY, CENTRAL  
HONG KONG  
TELEPHONE (852) 523-8266  
FACSIMILE (852) 522-1760

WRITER'S DIRECT DIAL NUMBER

(202) 383-5350

**VIA FEDERAL EXPRESS**

Plant Variety Protection Office  
U.S. Department of Agriculture  
NAL Building, Room 500  
10301 Baltimore Boulevard  
Beltsville, Maryland 20705-2351

Attn: Ms. Ann K. Zempolich

Re: **Assignment of Plant Variety Protection Certificates  
Owned by Sunseeds Company to Internationale  
Nederlanden (U.S.) Capital Corporation, as agent for  
the Lenders party to the Amended and Restated Credit  
Agreement Referred to Below**

QUR FILE NUMBER  
**410,894-14**  
DC1-211237.V1

Dear Ladies and Gentlemen:

Enclosed please find an originally executed copy of each of (i) the Amended and Restated Security Agreement (the "Security Agreement") dated as of March 14, 1995 by and between Sunseeds Company, a Delaware corporation (formerly known as Sunseeds Acquisition Corporation) ("Sunseeds"), and Internationale Nederlanden (U.S.) Capital Corporation, a Delaware corporation ("ING"), as agent for the Lenders party to the Amended and Restated Credit Agreement referred to below (in such capacity, the "Agent") and (ii) the Amended and Restated Plant Variety Certificates Collateral Assignment (the "Assignment") dated as of March 14, 1995 by and among Lehman Commercial Paper Inc., a New York corporation ("Lehman"), ING, as Agent, and Sunseeds. The Security Agreement and Assignment are provided for recordation of the assignment to ING, as Agent, of the 26 plant variety protection certificates ("PVPCs") listed in Schedule I of the Assignment in accordance with 7 U.S.C. § 2531 and 7 C.F.R. § 97.130.

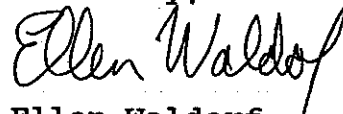
The PVPCs subject to the Assignment were assigned to Lehman, as agent for the lenders party to that certain Credit Agreement (the "Original Credit Agreement") dated as of March 31, 1994 by and among Sunseeds, Sunseed Corporation, a Delaware corporation (the Co-Borrower), Lehman, as agent, and the lenders

listed therein, pursuant to that certain Plant Variety Certificates Collateral Assignment (the "Original Assignment") dated as of March 31, 1994 by and between Sunseeds and Lehman, as agent for such lenders. The Original Credit Agreement was amended and restated pursuant to that certain Amended and Restated Credit Agreement dated as of March 14, 1995 by and among Sunseeds, the Co-Borrower, the Lenders, ING, as Agent, and Lehman, to provide for, among other things, the resignation of Lehman as agent and the appointment of ING as successor agent thereto. In connection therewith, the Security Agreement and the Assignment were entered into to amend and restate that certain Security Agreement dated as of March 31, 1994 by and between Sunseeds and Lehman, as agent for the lenders party to the Original Credit Agreement, and the Original Assignment and to reflect the appointment of ING as Agent.

From my telephone conversations with Ms. Ann K. Zempolich and Dr. Kenneth H. Evans of your office, it is my understanding that you will file a copy of this entire cover letter and a copy of Schedule I in the folder of each PVPC listed in Schedule I by placing the copies immediately behind each PVPC in order to notify anyone examining these PVPCs of ING's interest, as agent, in them and refer the examiner to the Security Agreement and Assignment filed in the Assignment Drawers of the Plant Variety Protection Office. Please take this action and any other steps necessary and appropriate to record the assignment in compliance with 7 U.S.C. § 2531 and 7 C.F.R. § 97.130.

To acknowledge your receipt of this letter, the Security Agreement and Assignment, please sign the enclosed copy of this letter on the designated signature line and return the signed copy to me in the enclosed prepaid Federal Express envelope. Thank you for your assistance.

Sincerely,



Ellen Waldorf  
for O'MELVENY & MYERS

EW/pt  
Enclosure

# SCHEDULE I

## PVPCs

### COLLATERAL ASSIGNMENT - PLANT VARIETY PROTECTION CERTIFICATES

PV#	Crop Kind	Name of Variety	Certificate Issue Date	Expiration Date
8100077	Tomato	Castlong ug	11/26/82	11/26/2000
8100078	Tomato	Castlerock	11/26/82	11/26/2000
8200139	Tomato	Castle Red	11/26/82	11/26/2000
7900076	Onion	Colossal	10/18/79	10/18/1996
7900086	Onion	New Mexico White Grano PRR	10/18/79	10/18/1996
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7600054	Lettuce	Gustaverde	08/24/77	08/24/1994
7600055	Lettuce	Mesaverde	05/31/77	05/31/1994
7900067	Lettuce	Commander	07/26/79	07/26/1996
8500064	Tomato	Mystro	09/30/87	09/30/2005
8700194	Tomato	Sun 1643	11/29/91	11/29/2009
8800057	Pepper	Prima Belle	09/30/88	09/30/2006
8300168	Okra	Cajun Queen	09/27/85	09/27/2003

Each of the above-referenced Plant Variety Protection Certificates are owned by Sunseeds Company (formerly known as Sunseeds Acquisition Corporation), a Delaware corporation.